

CLAIMS

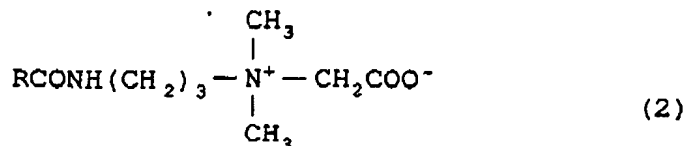
1. An oil-based ink composition for a ballpoint pen, comprising at least a coloring material, a resin and a solvent selected from the group consisting of an alcohol, a polyhydric alcohol and a glycol ether each having a vapor pressure of 0.001 mmHg or more at 25°C as a main solvent which occupies 50% or more of an entire solvent and, further, satisfying at least one of the following (a) to (c):

(a) further comprising a phosphoric acid ester neutralized material and polypropylene glycol;

(b) further comprising a chemical substance represented by the following chemical structure (1) or (2):



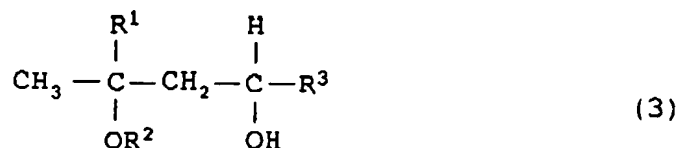
wherein R represents an alkyl group having from 10 to 30 carbon atoms; or



wherein R represents an alkyl group having from 10 to 30 carbon atoms; and

(c) while a solvent selected as the main solvent from the group consisting of an alcohol, a polyhydric alcohol and a glycol ether each having no aromatic ring in a molecular structure occupies 50% by weight or more of an entire solvent, further comprising a phosphoric acid ester neutralized mixture and, still further comprising an additional solvent selected from the group consisting of an alcohol, a polyhydric alcohol and a glycol ether each having an aromatic ring in an amount, based on an entire weight of the ink composition, of from 0.1 to 15% by weight.

2. The oil-based ink composition for a ballpoint pen, according to Claim 1, wherein the glycol ether is a solvent represented by the following chemical structure (3):



10 wherein R^1 , R^2 and R^3 each independently represent H or CH_3 .

3. The oil-based ink composition for a ballpoint pen, according to Claim 1 or 2, wherein the glycol ether is at least one type selected from the group consisting of: propylene glycol monomethyl ether, 1,3-butanediol, 3-methoxy-1-butanol and 3-methyl-3-methoxy-1-butanol.

15 4. The oil-based ink composition for a ballpoint pen, according to any one of Claims 1 to 3, wherein the main solvent is contained in an amount, based on an entire solvent, of 60% by weight or more.

20 5. The oil-based ink composition for a ballpoint pen, according to any one of Claims 1 to 4, wherein the main solvent is contained in an amount, based on an entire solvent, of 70% by weight or more.

25 6. The oil-based ink composition for a ballpoint pen, according to any one of Claims 1 to 5, wherein the phosphoric acid ester neutralized material is contained in an amount, based on an entire weight of the ink composition, of from 0.01 to 15% by weight.

30 7. The oil-based ink composition for a ballpoint pen, according to any one of Claims 1 to 6, wherein the polypropylene glycol has a molecular weight of 1,000 or more and is added in an amount of 0.01% by weight to 10% by weight.

35 8. The oil-based ink composition for a ballpoint pen, according to any one of Claims 1 to 7, wherein the coloring material is a pigment, or a pigment and a dye in combination.

9. The oil-based ink composition for a ballpoint pen, according to any one of Claims 1 to 8, wherein an amount of the chemical substance represented by the chemical structure (1) or (2) to be added is, based on the ink composition, from 0.5% by weight to 10% by weight.

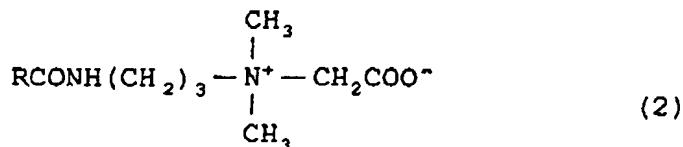
10. The oil-based ink composition for a ballpoint pen, according to Claim 9, further comprising a mixture of a phosphoric acid ester and an amine-type compound.

11. An oil-based ink composition for a ballpoint pen comprising at least a coloring material, a resin, a phosphoric acid ester neutralized material, and polypropylene glycol, and further comprising a solvent selected from the group consisting of an alcohol, a polyhydric alcohol and a glycol ether each having a vapor pressure of 0.001 mmHg or more at 25°C as a main solvent which occupies 50% or more of an entire solvent.

12. An oil-based ink composition for a ballpoint pen comprising at least a coloring material, a resin, and a chemical substance represented by the following chemical structure (1) or (2), and further comprising a solvent selected from the group consisting of an alcohol, a polyhydric alcohol and a glycol ether each having a vapor pressure of 0.001 mmHg or more at 25°C as a main solvent which occupies 50% or more of an entire solvent:



wherein R represents an alkyl group having from 10 to 30 carbon atoms; or



wherein R represents an alkyl group having from 10 to 30 carbon atoms.

13. An oil-based ink composition for a ballpoint pen comprising at least a solvent selected from the group consisting of an alcohol, a polyhydric alcohol and a glycol ether each having a vapor pressure of 0.001 mmHg or more at 25°C and having no aromatic ring in a molecular structure as a main solvent which occupies 50% or more of an entire solvent and, further, a coloring material, a resin, a phosphoric acid ester neutralized mixture and, still further, an additional solvent selected from the group consisting of an alcohol, a polyhydric alcohol and a glycol ether each having an aromatic ring in an amount, based on an entire weight of the ink composition, of from 0.1 to 15% by weight.

14. An oil-based ballpoint pen, containing an oil-based ink composition according to any one of Claims 1 to 13 in a refill.

15. The oil-based ballpoint pen according to Claim 14, further containing an ink follower in a rear of the ink in the refill.